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ABSTRACT

This document describes the AFL-CIO's Upgrading and Career Ladder Program (UCLP), which creates a system of structured, work-based learning integrating on-the-job training with related theoretical instruction. The UCLP has the following objectives: to meet workers' skill upgrading and occupational mobility needs; to encourage unions and employers to sustain learning programs through collective bargaining provisions; to operate workplace demonstration programs; and to facilitate union/worker participation. The first two sections of this document present an overview of the apprenticeship system and recount the Apprenticeship 2000 initiative history, including labor organizations' comments. Because ongoing training systems upgrade workers' basic skills, section III provides a perspective on the debate over workplace literacy. A review of labor market information is included in section IV. The narrative part of the report concludes with a section on upgrading experience in government programs, the relationship of upgrading to career development, and the importance of union and worker participation in workplace learning systems. The extensive selected bibliography provides 235 references on the following subjects: apprentice system, apprentice 2000 initiative, learning basic skills--a perspective, labor market information, and union and worker participation--the key to career development. (NLA)

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••• Upgrading America's Workforce

Through Participation and Structured Work-Based Learning: UCLP Research Report

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•••Preface

The 1990s will determine whether the United States ever gains the capacity to effectively compete with the economic powerhouses of Japan and a unified Europe. A large part of the nation's task, everyone seems to agree, is to devote far more attention to human resources and continuous learning systems. But few move to the next step: that increased training is effective only if workers and their unions are progressively empowered to play a significant role in shaping a wide range of traditional "management prerogatives."

Closely related to these statements is the central proposition of this report: **that workers and their unions must fully participate in the design, implementation and administration of continuous learning systems based in the workplace.** Any schemes to deliver more training or increase productivity, whether in union or non-union settings, are doomed to failure unless workers and their representatives exercise a meaningful level of control over them.

Unions bring a century of expertise and a keen understanding of workers' needs to the ongoing debate about the role of training in economic revitalization. As the employment and training arm of the AFL-CIO, the Human Resources Development Institute (HRDI) was established in 1968 to tap the broad experience and talent within the labor movement on a wide array of training programs. A key partner in the nation's employment and training system, HRDI has engaged in numerous activities: from helping veterans, Native Americans, offenders and disabled persons gain access to job opportunities, to operating apprenticeship outreach and dislocated worker programs. During the 1980s, the Institute conducted more than 250 job search assistance workshops and training seminars, and helped labor organizations develop retraining programs funded at more than $40 million.

HRDI obtained a grant from the U.S. Department of Labor (USDOL) in July 1989 to operate an Upgrading and Career Ladder Program in accordance with SGA-DAA 89-104, issued by USDOL as part of its "Apprenticeship 2000" initiative. The program will run for a minimum of 18 months, from July 1, 1989 through December 31, 1990.

Under the Upgrading and Career Ladder Program (UCLP), HRDI is working with AFL-CIC affiliates and selected employers to develop effective and novel approaches for upgrading the skills of workers in manufacturing, high tech, service and other occupations not traditionally associated with apprenticeship. The program will help to create a flexible and adaptable system of "structured work-based learning" that integrates on-the-job training with related theoretical instruction. The UCLP has four primary objectives:

1••• **To develop a model of "structured work-based learning" that provides guidance to service and manufacturing firms designing programs to meet the skill upgrading and occupational mobility needs of their workers.**

2••• **To encourage unions and employers in specific companies to sustain ongoing workplace learning programs through provisions in collective bargaining agreements.**

3••• **To operate demonstration projects that illustrate the advantages of labor and management working cooperatively to plan, design, implement and administer training programs grounded in the workplace.**

4••• To identify effective approaches that facilitate the full participation of unions and workers in the development of workplace training.

This document, based upon a comprehensive literature search and a review of relevant material in the training and career development field, constitutes the research report required under the UCLP. Section I presents a very brief overview of the apprenticeship system, while Section II recounts the recent history of the Apprenticeship 2000 initiative, including comments made by labor organizations. Because ongoing training systems must include a component that enables workers to upgrade their basic skills, Section III provides a perspective on the current debate over workplace literacy. (Much of this section is derived from a technical assistance guide on basic skills that will be published by HRDI in mid-1990.) A review of selected labor market information is included as Section IV. The narrative part of the report concludes with a section on upgrading experience in government programs, the relationship of upgrading to career development, and the importance of authentic union and worker participation in successful workplace learning systems. The selected bibliography reflects those publications that HRDI has compiled and reviewed in order to provide guidance to the UCLP.

Washington, D.C. D.M.

Revised May 1990

•••I. The Apprenticeship System

The apprenticeship system of training is one of the best kept secrets in the employment and training field. Although registered apprentices comprise a small proportion of the domestic workforce — about 300,000 civilian employees in 1988 — apprenticeship consistently produces capable and highly-skilled workers with a broad-based range of competencies in their chosen crafts. Centuries of experience have demonstrated that the process of "learning by doing" is a highly successful way to absorb job-related skills and knowledge, for it ensures that training is guided by the accumulated expertise possessed by experienced workers.

Over the past 100 years, especially since the passage of the National Apprenticeship Act (the Fitzgerald Act) in 1937, many informative studies, reports and government publications have described various aspects of the apprenticeship system. (See Selected Bibliography.) It is not necessary to reiterate this information here. At its most fundamental level, apprenticeship combines structured on-the-job training, under the supervision of a mentor or journey-level worker, with related theoretical instruction ordinarily delivered in the classroom. Most importantly, apprenticeship is a private-sector system in which apprentices are wage-earning employees of a company or companies and advance up a wage progression while learning the trade. These basic features give apprenticeship the potential to be highly responsive to the skill needs of employers and to a rapidly-changing labor market. It is estimated that more than 3.5 million workers have been trained through apprenticeship during the last 50 years.

Why train through apprenticeship? "Among other reasons, apprenticeship gives workers versatility by teaching them all aspects of the trade," explains an article in **Occupational Outlook Quarterly**. "It helps them (apprentices) learn to work with different kinds of people in an actual shop. It familiarizes them with the overall picture of a company's operation and organization .... and can ensure them good jobs with good pay." (Egan, 1978) The article goes on to describe a 1971 study that concluded that apprenticeship graduates were more educated, learned their trades faster, were more likely to become supervisors, were more productive, and were more likely to maintain regular employment. The advantages attributed to apprenticeship (National Apprenticeship Program, 1988) include the following:

••• Opportunity to earn while you learn

••• Blends theoretical and practical learning

••• Motivates learners not responsive to classroom instruction alone

••• Provides a bridge between school and work

••• Helps to ensure use of up-to-date equipment

••• Trains for occupations recognized throughout industry

••• Career placement is a built-in feature.

The only truly effective apprenticeship programs are those conducted in a cooperative labor-management framework. Approximately 80 to 90 percent of all apprentices are involved in programs that are administered jointly by labor and management, usually in the form of locally-based Joint Apprenticeship Committees. According to a 1982 study (Business Roundtable), provisions in collective bargaining agreements that fund joint apprenticeship programs generate more than $230 million per year. Joint sponsorship guarantees that workers and their unions have direct input into the training process, helping to ensure that workers obtain broad-based, flexible skills that will serve as the basis for career progression.

Jointly-sponsored programs show great variation, reflecting their adaptability to the nature of different trades and industries. National apprenticeship standards distributed by the International Association of Machinists (IAM), for example, include 20 occupations, from Electronics Mechanic to Automotive Machinist. The Comprehensive Training Program co-sponsored by the International Brotherhood of Boilermakers consists of 10 parts, including journeyman upgrading and supervisory skills for prospective construction foremen. To help provide the "flexibility to accommodate specialty contractors ... and give apprentices a larger scope of skill and knowledge," the Carpenters' National Joint Apprenticeship and Training Committee has established a Performance Evaluated Training System (PETS). Through this competency-based system, using slide shows, carpenter apprentices draw from work processes in 14 general skills areas and more than 200 subspecialties. (Carpenters, 1988)

In addition, many joint programs have national training trusts that promote uniform curriculum, instructor training, and journeyman upgrading. Since 1954, for example, the United Association of the Plumbing and Pipe Fitting Industry (UA) has collaborated with Purdue University to sponsor an annual Instructor Training Program. Through a week-long, intensive series of classes, UA instructors receive training in applied knowledge, applied technology, and professional teaching techniques geared to the needs of experienced craft workers. Sessions enable instructors to upgrade their knowledge of the latest technologies in the trade, and learn how to make effective use of the union's extensive array of customized training materials. After five years of satisfactory attendance at these annual gatherings, a UA instructor receives a teaching certificate from Purdue and is eligible for graduate courses. This enormous undertaking — which involved some 1,200 participants and 72 courses at the 1989 session alone, and has trained 28,000 instructors since 1954 — is a key component of the union's $70 million apprenticeship training and journeyman upgrading program.

The International Association of Bridge, Structural and Ornamental Iron Workers has conducted Foreman Training Seminars for more than 400 members. Topics include team building, communication skills, time management and jobsite health and safety. Such training has been so popular, according to the 1989 Annual Video Report of the union's national training trust, that the Iron Workers are considering integrating it into their yearly instructor training session in San Diego, California.

The intrinsic advantages of training on the apprenticeship model, in conjunction with its natural linkages to other training and educational efforts, make it an excellent candidate to help meet the nation's pressing need for skilled, technologically-sophisticated workers with the capabilities to perform quality work, think independently, and engage in continuous lifelong learning in terms relevant to their everyday experience at the workplace.

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•••II. Apprenticeship 2000 Initiative

Since publication of the first issue paper by the U.S. Department of Labor (USDOL) in December 1987, the AFL-CIO Human Resources Development Institute (HRDI) has followed closely the evolution of the "Apprenticeship 2000" Initiative. From the outset, the initiative recognized that apprenticeship represents a well-established system with great potential to help meet the skill needs of industry as well as the upgrading, retraining and career ladder needs of workers. The purpose of the initiative was to explore how the concept and principles of apprenticeship could be transferred to industries and occupations not ordinarily associated with apprenticeship. The formulators of the initiative also understood that those institutions deeply involved in apprenticeship would express "legitimate concern" that the effort "could erode and dilute the value of the existing system." (Apprenticeship 2000 Issue Paper, 1987)

The themes of "Apprenticeship 2000" were elaborated in the course of public hearings, focus papers and short-term research projects, culminating in a major BAT Policy Paper released in late 1989. Public meetings in three cities yielded more than 300 responses, including statements by 35 labor unions and 53 Joint Apprenticeship and Training Committees (JATCs). While the overwhelming majority of respondents (94 percent) agreed that the apprenticeship system should be expanded to encompass non-construction industries and occupations, most cautioned that there should be limitations to the occupations to which apprenticeship is applied. A number of respondents focused on the applicability of apprenticeship to continuing training and worker upgrading. There was strong sentiment for expanded apprenticeship training to be delivered through partnership arrangements such as the labor-management structure embodied in the JATCs.

Reservations about the expansion of apprenticeship, however, arose in response to the focus papers, the first of which was published in October 1988. This document tackles two of the most important and controversial questions relating to the initiative: perceptions of the essential meaning of apprenticeship, and how quality should be defined. Recognizing both broad and narrow definitions, the focus paper proposes a "core definition" of apprenticeship as "skill learning through structured on-the-job training and progressive work experience combined with theoretical instruction." (Apprenticeship 2000 Focus Paper, 1988) It further suggests alternative approaches to program structure, contrasting a separate system (with its own terminology and procedures) with the creation of varying levels of achievement within the current structure. The issue of quality is discussed in terms of process (curriculum, work processes, assessment, instructor qualifications, etc.) and outcomes (skill competency and completion rates). Public comment was requested.

Representing organizations with nearly 80 percent of the registered apprentices in the US, the AFL-CIO Building Trades - Metal Trades Joint Apprenticeship Committee commented that "it is neither possible nor desirable to 'broaden' the definition of apprenticeship in the manner suggested in the focus paper." While the committee agreed with the accuracy of the core definition, it recommended that "Apprenticeship 2000" focus on increasing the use of apprenticeship training as currently structured. The committee expressed deep concern about maintaining the quality of training:

> Quality implies a level of excellence in the outcome and structure of the apprenticeship program. This quality or excellence cannot be tied down by a limited definition... Rather, quality must be determined by industry itself in light of that industry's evolving needs within the national economy. Apprenticeship programs best meet the needs of industry when

> programs involve a partnership between labor and management because labor and management constitute the industry. Through such a partnership the nation can serve industry's needs for high quality training and also safeguard the welfare of apprentices. (Georgine, Burnsky and Robertson, 1988)

Similar issues were raised when international unions commented on Focus Paper No. 1. The Operating Engineers disagreed with any attempts to use apprenticeship to legitimatize learning objectives whose final result would be less than journey-level skills. Quality is closely related to the private sector nature of apprenticeship, the Brotherhood of Electrical Workers (IBEW) pointed out, in which training responds to the long-term skill needs of an entire industry, not just individual employers. The Carpenters union disputed the core definition itself, fearing that the initiative would lower training standards and water down the basic apprenticeship system.

These concerns and others were voiced in meetings with representatives of the Bureau of Apprenticeship and Training (BAT), leading to an understanding that the initiative would leave the current apprenticeship system intact — or strengthen it through additional promotion by the federal government. The BAT would look towards a parallel system to be called "structured workplace training" (or a similar designation) indicating its difference from traditional apprenticeship.

The second focus paper, published in January 1989, reflected the understandings reached through ongoing conversations with BAT staff. While discussing the issues of support activities, linkages and federal/state roles, the paper assumes that there will be additional promotion of current apprenticeship along with the creation of a separate system to implement "structured work-based learning." The paper outlines barriers to the expansion of apprenticeship, and then lists a wide array of alternatives related to the three topic areas mentioned above.

The subject of linkages is covered extensively by several of the short-term research projects, notably the **Final Report: Explore Vocational Education, Counseling, and Information Processes** (Meridian, 1988). The authors identify 12 types of linkages between apprenticeship and education, from space for related instruction and curriculum development (the two most common) to associate degree programs and school-to-work transition. The report concludes that categories of linkages have expanded in the past 15 years, with great potential for future growth. Several findings are particularly relevant to the Upgrading and Career Ladder Program:

- Among 15 references to apprenticeship in the Carl D. Perkins Act of 1984 is a provision (Sec. 342(b)(1)) for the Secretary of Education to make grants to states to fund programs that train skilled workers in high technology occupations.

- More than one-half of the related instruction in apprenticeship programs occurs in community colleges or technical institutes, a major shift from a decade ago when the classroom component was most likely to be delivered at high schools.

- Virtually every state has apprenticeship-linked associate degree programs at postsecondary institutions, a practice pioneered by the International Union of Operating Engineers in 1972. This growth provides individuals with greater opportunities to upgrade their skills continuously and advance up career ladders.

A review of the summaries of other short-term research projects reveals several references to upgrading and career ladders. A study by Fedrau & Associates, "Barriers to Expanding Apprenticeship and Alternative Apprenticeship Models," finds that persons at the low end of the occupational hierarchy have difficulty upgrading their skills, and that the apprenticeship model could be used

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to help workers cross the line from blue-collar to white-collar jobs. The authors recommend that job/skill assessments be performed in clusters of related occupations to provide workers with more flexibility in their career choices.

Following the focus papers and short-term research, the next phase of "Apprenticeship 2000" involved the funding of demonstration projects. In spring 1989 the U.S. Department of Labor, Employment and Training Administration issued three Solicitation for Grant Applications (SGAs), calling for programs that would combine additional research with demonstration projects. Entire programs would operate for as long as 24 months. USDOL awarded grants to three organizations:

- National Alliance of Business (NAB) to conduct research and implement four demonstration projects to test how structured workplace training can be applied to skill training for entry-level workers
- 70001 Training & Employment Institute to conduct research and operate three demonstration projects exploring the potential for structured workplace training to meet the skill training needs of small and mid-size businesses
- AFL-CIO Human Resources Development Institute (HRDI) to conduct research and implement three demonstration projects to test the applicability of structured workplace training to workforce needs for career ladders, upgrading and skill refresher courses.

Other grants were awarded to CSR Incorporated, to study linkages between apprenticeship and education programs, and FU Associates to develop a Management Information System for BAT.

In joint meetings with federal government staff, grantee organizations were informed that the "Apprenticeship 2000" initiative would serve as the foundation for a major USDOL emphasis on training in the workplace. This trend in federal policy is evident in their policy paper, **Work-Based Learning: Training American Workers**, which presents a set of eight broad policy recommendations for government action, providing a "framework for new national leadership." (U.S. Department of Labor, November 1989) The report not only presents steps to preserve and strengthen the basic apprenticeship model, but also describes prospective support structures and parameters for a separate system of "structured work-based learning." The Department proposes to adopt a "significant new role" that would promote increased attention to training for currently employed as well as disadvantaged workers:

> In the past, the Department has focused its resources and attention almost exclusively on the needs of hard-to-serve population groups, including at-risk youth and dislocated workers. Marketplace circumstances, both national and international, drive the need for additional emphasis on training and retraining issues affecting **all** workers.

The "Apprenticeship 2000" initiative thus may constitute the opening wedge for more concerted federal government attention to the training, retraining, and skill upgrading needs of employees at all levels of the workforce.

•••III. Learning Basic Skills: A Perspective

Since the earliest apprenticeship programs, unions have been vitally concerned about literacy and basic skills. Workplace literacy programs have evolved from simple reading lessons conducted during working hours in the manufacturing plants of a hundred years ago, to extensive skill upgrading programs that keep workers abreast of sophisticated modern technology. Today, some of the nation's foremost literacy programs are those in which labor plays a prominent role.

For unions, basic skills goes far beyond the "3Rs" or the specific job-related skills needed to perform a particular occupation. Basic skills must be part of a continual process of human resource development. Learning is a lifelong commitment that enables working people to function as citizens, consumers, family members, and active participants in community affairs — as well as workers on the job. As Samuel Gompers summarized this perspective in 1916:

> The organized labor movement realizes that education is not an arbitrary thing that ends witha certain year of life, but that it must continue throughout life if the individual is really to live and make progress ... [Unions] realize that education is an attitude towards life — an ability to see and understand problems and to utilize information and forces for the best solution of [life's] problems.

The 1980s have witness a tremendous upsurge of interest in basic skills and literacy. This renewed attention flows from the fact that the country faces a growing mismatch between the skills possessed by the people available for work, and the nature of the jobs to be filled. The roots of this mismatch lie partly in changes in the U.S. economy, and in the nation's relationship to the international economy, and partly in the changing composition of the domestic workforce. Those changes are being felt across many sectors of the economy, including industries and occupations that are highly unionized.

Literacy standards must reflect the demands of a technologically sophisticated modern society, where it is essential not only to read but to process information from the printed page. Jobs now, on average, require workers to be more proficient in math, reading and writing than in the past.

Research reports have found that most workers possess at least the low-to-moderate skill levels required by modern society. But a substantial number lack the skills they need to cope with the more complex tasks they encounter on a frequent basis. How many? The U.S. Office of Education estimates that 27 million adults lack the literacy skills needed for everyday life. Other estimates range from 20 to 30 million, or higher.

Only about 3 or 4 million of this larger group are true "illiterates" — people who cannot recognize and interpret letters, numbers, or words.

The others may be considered "functionally" illiterate. They lack crucial basic skills to help them handle some of the situations that arise constantly in their jobs and personal lives.

Despite the relatively small number of persons who are truly "illiterate," and the ongoing debate over how broadly or narrowly literacy should be defined, the basic skills problem is consistently exaggerated and distorted by the national media and opinion makers — often distorted in ways that stigmatize blue-collar workers and insult their dignity. There is a pronounced tendency to view basic skill deficiencies as personal failures, to blame individual workers for a lack of will and determination to overcome their weaknesses. The image of the ignorant and illiterate blue-collar workers has been enshrined in American culture, for example,

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by the Dennis Weaver character in the Made-For-TV Movie "Bluffing It." Here, his inability to read leads to him losing his job, tragedy on the highway, and then resurrection through a tutoring program.

Business criticism of education has reached new levels of stridency in recent years. "Smarter Jobs, Dumber Workers. Is That America's Future" blares a **Wall Street Journal** (February 9, 1990) headline on special section about why "our schools don't seem up to the task." In a **Business Week** (May 15, 1989) advertisement, the Ad Council charges that "27 Million Americans Can't Read. And Guess Who Pays the Price." Such attacks are quite ironic, considering that the structure and ideology of the public school system was shaped by the attacks of an earlier generation of businessmen. Since the turn of the century, the "factory school" has been geared towards producing the kinds of students desired by mass production industry and local corporate interests: docile, moderately-skilled young people who are socialized to memorize facts, obey authority and follow rigid instructions.

A little history provides a useful perspective here. In the early 1900s the vast influx of immigrants into America and the movement of blacks into urban areas placed a tremendous strain on the public school system. As the deficiencies of schools became more apparent, the entire system was attacked harshly by muckraking magazine writers, some going as far as to charge that public schools were coddling laggards and producing "retarded" children. The tenets of "scientific management" were gaining wide popularity during this period and the critics of public education increasingly focused on "inefficiency" as the basic problem. As a result, between the years 1910-1925, school administrators came under enormous pressure to begin running their schools as if they were business enterprises, using cost accounting methods and evaluating the "efficiency" of their "school plant" according to the cost per pupil educated. In their prolific articles, influential professionals repeatedly emphasized how schools should respond to the immediate needs of business. Typical were the words of Ellwood P. Cubberly, dean of the Stanford School of Education and author of an authoritative text book on administration:

> Our schools are, in a sense, factories in which the raw products (children) are to be shaped and fashioned into products to meet the various demands of life. The specifications for manufacturing come from the demands of twentieth-century civilization, and it is the business of the schools to build its pupils according to the specifications laid down. (Cubberly, 1916)

Businessmen themselves minced no words when it came to defining the appropriate goals of education. "It is proper to say that the schools are like factories turning out graduates, which, in turn, become employees of the business houses and may be considered the raw material of business," one executive told a group of school superintendents in 1915. (Callahan, 1962) In Chicago, Marshall Field cautioned that "education should not be excessively intellectual; that would detract from the young's ability to work with concentration and dedication." (McNeil, 1988)

Studying the impact of the "cult of efficiency" on education, Raymond E. Callahan found that the highly vulnerable position of school administrators — dependent upon the good will of business leaders who came to dominate school boards; exposed to the vagaries of public opinion — led them to rapidly collapse in front of corporate critics. Schools were reorganized into virtual assembly lines, with students passing from class to class having subjects installed upon them. An "efficient" school was viewed as one with low cost per pupil; this led directly to larger classes, heavier teaching loads, and frozen pay scales for increasingly harassed teachers. Standardized test scores became the prime indicator of a "high quality" product. Schools began using advertising techniques to buttress public support. The training of the "school executive" came to be

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dominated by the mechanics of budgeting, salesmanship and housekeeping. What about quality control? In Chicago, leading citizens were invited to "Sampling Day," a chance to "inspect" eighth-graders who were lined up on stage to answer questions.

Does this sound like a lot of outmoded turn-of-the-century rhetoric? Not so. In Chicago a group of some 60 companies are financing and operating an elementary-level Corporate/ Community School in which poor urban students are selected by lottery. (There's an innovation: using the principles of gambling to determine which children are permitted to attend a "good" school!) Dubbed "bottom-line education" by the **Wall Street Journal**, the school is driven by "productivity" measures (such as cost per pupil) and has achieved higher test scores, the article claims, because of its "corporate management model" and the fact that the administrators "aren't locked into rigid collective-bargaining agreements that often stifle innovation." (Graham, 1990) While teachers reportedly earn 10 percent more than the local pay scale, they work a longer day, teach more days per year, and have raises tied to performance.

What is the educational philosophy of the Corporate/Community School? "If you were manufacturing Buicks, you would have the same objectives," contends Executive Director Walter L. Kraus of Baxter International Inc. After a nationwide search, local industrialists chose Elaine C. Mosley as the school's CEO. "You and I have a lot in common," she told corporate executives at a breakfast meeting. "You have chosen to provide services and make products to meet a select market demand. I'm in the business of developing minds to meet a market demand." This is just the beginning, the article concludes, of corporations striving to "revamp entire city school systems." (Graham, 1990)

The genesis and endurance of the "school as factory" model sheds light on the underlying dynamics of the basic skills issue. The problems of our schools are rooted in the character and philosophy of American corporations and the diffusion of that philosophy throughout society. Since the turn of the century, managers of production facilities have not sought workers who were knowledgeable, flexible and independent-minded. Obedience was valued above all else. Workers were supposed to perform their part of the production process efficiently, without complaint, and without the desire to exercise any control over the manner in which things got done. Mass production followed the rules set out by Frederick Taylor: fragmentation of tasks, rigid work rules, a proliferation of highly-specialized managers, and authoritarian supervision. Public schools produced students with these "specifications" in mind and the entire system operated to limit the skills required on the shop floor, transferring knowledge to machines and upper levels of management.

Company training followed along accordingly. A number of reports have concluded that corporate training funds are concentrated on professional and managerial staffs, with little attention to maintaining the skills of hourly workers. Education in American industry has perpetuated a managerial and technical elite, with planning and intellectual work reserved for the "Thinking Department." Production workers, the argument went, needed only the ability to follow the precise instructions delivered to them by this elite. As one proponent of scientific management put it: "Training a worker means merely enabling him to carry out the directions of his work schedule. Once he can do this, his training is over, whatever his age." (Friedmann, 1955)

The utility of the mass production model for industrial and educational institutions has been destroyed by the impact of advanced technology and the steady integration of the international economy. These trends

> greatly elevate the importance of education in the economy and change the nature of the educational system required for success in a world class system.... where workers manage information and analytical systems, students must have different skills and knowledge. They must be active

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> learners and problem-solvers; they must be able to think for themselves, analyze data, and communicate with precision. They also must have the kind of education that will help them be creative and flexible, i.e. have the ability to adjust to change. (Policy Research Project, 1988)

Healthy, well-educated, highly-skilled and motivated people are the primary resources for modern economic development and social progress. Investments in human capital are key.

Fundamental changes in learning systems are needed to educate and train workers with these skills — the broad basic skills required to function effectively in modern society. A worker-centered approach is paramount. Unions have a special contribution to make, comments a City University of New York report, to workplace-based literacy programs:

> Trade unions are effective purveyors of this new educational medium (workplace literacy) because they are in daily contact with workers and therefore have an intimate knowledge of their personal and workplace needs; they understand the problems peculiar to worker education; they are trusted by their membership to work on their behalf; they have the experience and contacts to establish needed programs; and they speak the language of the average working man and woman. (City University of New York Graduate School)

HRDI will integrate a worker-centered approach to basic skills into its Upgrading and Career Ladder Program, working closely with international unions, locals and their members to ensure that structured workplace training is responsive to their needs as well as to the special conditions of industries and particular occupations. Labor's learning strategy will be guided by three general principles:

- Adult basic skills training must reach people through their workplaces. Most of the 20 to 30 million adults who need basic skills assistance are already out of school, and learning programs must find them where they work.
- Lifelong learning must be recognized as an integral part of working life. Training must be viewed as a renewing process, able to respond to the evolving needs of the individual, the job, and life in contemporary society.
- Employers have a responsibility to keep the skills of their workers up to date. Unions will press employers to reexamine their in-house training priorities to be sure they address the evolving needs of all their employers, blue collar and white collar, female and male, production workers and technical/managerial employees.

True career mobility requires a sense of ownership and worker participation in the development of joint union-management training systems. Employees must have equal access to training, education and upgrading services in order to excel in ways that promote personal development, company vitality, and the ability of the entire organization to successfully grapple with the pressures of international competition.

•••IV. Labor Market Information

A review of selected labor market information compiled by the federal government provides an essential backdrop for HRDI's Upgrading and Career Ladder Program (UCLP). The choice of demonstration projects will be guided by the changing structure of the American economy, especially as reflected in industry employment and occupational projections to the year 2000. When correlated with enormous changes occurring in the composition and demographics of the workforce, these developments offer a compelling argument for significant investment in training and skill upgrading for currently employed workers.

The Bureau of Labor Statistics (BLS) projects a net increase of 21 million jobs, reaching a total of 139 million, between 1986 and 2000. More than 20 million of these new jobs will be in the service-producing sector. This category encompasses a wide range of industries, from business services and auto repair, to recreational facilities and data processing. The largest percentage increases will be in two areas: computer and data processing (an employment increase of 5.2 percent or 612,000 jobs), and outpatient facilities and miscellaneous health services (an increase of 4.6 percent or 512,000 jobs). The overall category of health services (SIC 80) is expected to add more than 3.2 million jobs during this period.

The manufacturing sector has been battered severely in the last decade, losing some 2.8 million jobs from its employment peak in 1979 through the recession of 1981-82. (From 1979 to 1986, the primary metals industry alone lost more than 500,000 jobs nationwide.) The BLS projects that future manufacturing employment will remain stagnant, losing about 834,000 jobs between 1986 and 2000. As a proportion of total wage and salary employment, however, manufacturing will continue to decline. By the year 2000, manufacturing jobs will account for only 15 percent of total payroll employment, down from 19 percent in 1986. Most of the remaining manufacturing positions are expected to involve a high level of individual judgement, conceptual thinking and interaction with computerized systems.

The implications of this dramatic shift in job growth from manufacturing to services has been a source of controversy since the early 1970s. While futurists and sociologists such as Daniel Bell extolled the virtues of a "post-industrial society", organized labor and many commentators decried the evolution of America towards a society of hamburger-flippers. Debate has raged over the phenomenon of deindustrialization (or the "hollowing-out" of American industry, as **Business Week** put it), the potential benefits of government-directed industrial policy, and the prevalence of good jobs or bad jobs in expanding service sector occupations.

In their **Workforce 2000** report, the Hudson Institute cites the shift in production from goods to services as one of the six great trends reshaping American society. After explaining that service-producing industries create value without creating a tangible product, the report argues that the growth in service employment is an inevitable result of industrial advancement. Manufacturing plants and employment are becoming irrelevant to the health of the American economy. Those who attempt to preserve the nation's manufacturing capacity, the report contends, "are swimming upstream against a powerful tide.... Just as agriculture lost its central role in the American economy at the beginning of the century, so will manufacturing lose economic importance as the century draws to a close." (Johnston and Packer, 1987)

Others disagree with this "don't worry, be happy" vision of a glorious future of prosperous, sunrise industries. University of California economists Stephen S. Cohen and John Zysman point out that core service activities are tightly linked to manufactured products; lose your manufacturing capacity and service employment will erode. Furthermore, effective research and development must be tied to the actual manufacture of goods to sustain the process of technological innovation

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and new product development, the essence of the "competitive edge" in global markets. "Manufacturing matters mightily to the wealth and power of the United States and our ability to sustain the kind of open society we have come to take for granted," they assert. "There is absolutely no way we can lose control and mastery of manufacturing and expect to hold onto the high wage service jobs that we are constantly told will replace manufacturing." (Cohen and Zysman, 1987)

While disagreement over the relative importance of services vs. manufacturing can be expected to continue, there is a growing consensus that a healthy, technologically-sophisticated manufacturing sector is essential for long-term prosperity. In 1985 the Commission on Industrial Productivity of the Massachusetts Institute of Technology (MIT) set out to evaluate the condition of eight industries, using a "bottom-up approach" that assessed technological change, human resources and management methods. In **Made In America**, the Commission finds that manufacturing has a critical impact on the balance of trade, research and development expenditures, the application of advanced technology, national security and the overall productivity of the entire economy. Policies that seek to abandon manufacturing are untenable and potentially disastrous to the nation's competitive standing worldwide.

Recognizing the interrelationship between these two sectors, HRDI will conduct demonstration projects in both service and manufacturing industries. It is expected that projects will work with unions and employers in the following areas:

- Health care services: training for employees in hospitals, health maintenance organizations, medical centers and outpatient clinics.
- Manufacturing: training in the use of advanced technology for the production of goods in aerospace, aircraft and industrial machinery firms.

At this time HRDI does not anticipate operating demonstration projects in agriculture, mining, construction, transportation, communications, utilities, or finance, insurance and real estate.

The industry areas above contain a range of occupations: low-wage and high-wage, unskilled and professional, declining jobs and rapidly-growing positions. Many of these occupational areas span several industrial sectors. The fast-growing technician category, for example, includes Registered Nurses (health care) as well as drafters and computer programmers (aerospace).

In general terms, the UCLP will design on-the-job training and related instruction for lower-skilled workers in unionized settings to enable them to upgrade their skills and move onto career ladders (or career lattices) for jobs that entail higher skills, more responsibility, and increased wage rates or salaries. This effort responds directly to the "skill gap" that has become a frequent topic of discussion among employers and government officials.

Workforce 2000 predicts that more than 50 percent of all the new jobs being created between 1984 and 2000 will require some education beyond high school; college graduates will fill almost one-third of these positions. Jobs requiring lower skill levels will comprise a declining portion of new jobs. New workforce entrants, on the other hand, will be concentrated among those groups that historically have possessed low educational attainment and skill proficiencies. The extent to which this mismatch is resolved will have a major impact on workers and the entire economy:

> For individuals, the good jobs of the future will belong to those who have skills that enable them to be productive in a high-skill, service economy. For the nation, the success with which the workforce is prepared for high-skilled jobs will be an essential ingredient in maintaining a high-productivity, high-wage economy. (Johnston and Packer, 1987)

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The current national spotlight on the skill deficiencies of new workforce participants tends to obscure a related issue: the need for skill upgrading for currently employed workers. An estimated 75 percent of employees in the year 2000 are already engaged in the active labor force. To implement new technology and work processes in manufacturing, and increase productivity in the service sector, employed workers need access to skill upgrading and systems of lifelong learning geared to workplace activities. It is upgrading and career ladders that help give workers the motivation and tools to excel — and open entry-level slots for new employees. This dimension of the nation's training challenge touches many other areas: career development, worker mobility, workplace training techniques, and an assessment of existing practice.

•••V. Union and Worker Participation: The Key to Career Development

Employers and personnel managers are becoming obsessed with their much-publicized quest for entry-level workers. This is the conclusion of a recent study by the London-based Incomes Data Service, whose research casts doubt on the magnitude and severity of the phenomenon that has become conventional wisdom in U.S. and British employment and training circles. The youth recruitment problem is concentrated in a relatively few sectors of the economy, the report finds, and misdirected government programs may worsen the situation. It cautions: "The obsession with recruitment is in danger of crowding out the most important issue, how to retain and develop people to work in new ways." (Leadbeater, 1989)

During the 1980s, continuing growth in new jobs pulled more women, immigrants and others into the workforce, leading to a steady rise in the labor force participation rate. Increasing numbers of discouraged workers in rustbelt states such as Michigan and Pennsylvania, reported **Business Week** in early 1989, are actively seeking employment. "There are plenty of people out there to fill all the jobs that industry can supply," commented Irwin L. Kellner of Manufacturers Hanover Trust Co. (Mandel, 1989)

Furthermore, the Bureau of Labor Statistics (BLS) points out that the "mirage" of severe labor shortages has been produced largely by anecdotal reports of difficulties being experienced by individual employers, not by analysis of definitive data. There remains sufficient time for employers and the educational system to utilize a number of strategies in the next decade to compensate for projected shortages in particular industries and geographic areas. A realistic assessment, says the BLS, is essential:

> The limited information available does not support any likelihood of a general shortfall of workers through the year 2000 nor suggest widespread shortages of any broad demographic or educational group.... Labor shortages, as in the past are likely to be confined to a relatively small number of occupations or to limited areas of the country experiencing spurts of economic growth that exhaust the immediately available supply of labor. (Sargent, 1988)

The process of training, upgrading and developing career ladders for currently employed workers should be viewed as an equal priority to the smooth integration of young people and other new entrants into the labor force. Keeping the skills of employed workers in tune with technological advances (in equipment, production processes and the organization of work) through continuous human capital investment will help to assure the nation's status as a robust and internationally competitive economy. Only such conditions can provide true opportunity for new workforce participants.

Yet past federal training efforts have not devoted concerted attention to the needs of current workers. Since the passage of the Manpower Development and Training Act (MDTA) in 1962, federal job training programs have become adjuncts to the nation's social welfare policy, concentrating on bringing poor, disadvantaged and unemployed persons into the mainstream of society. Although such activities are praiseworthy and need to be intensified, they are woefully inadequate. Moreover, their credibility has been weakened by their distinctly paternalistic tone. In the words of former steel executive Frank Cassell, who served as head of the Employment Service in the mid-1960s, these efforts

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> are directed towards the marginally employable, the chronically unemployed, and those who through discouragement have given up even trying to find a job.... It means trying to get 'at' a person, to break through what to most of us is an alien veneer of social mores, and try to figure out how he could be motivated and helped to take a meaningful place in American society. In a sense, it means being the Good Samaritan who offers the helping hand. (Bakke, 1969)

Writing in 1968, Yale University economist E. Wright Bakke analyzed the development of U.S. employment policy since World War II, comparing its thrust to that of Northern European nations. He identified a number of deeply-rooted aspects of American culture, including employer aversion to anything that smacked of central government planning, that combined to give manpower policy a narrow and incomplete mission. Minimal attention was given to measures to prevent unemployment, enhance the job creation potential of business, or coordinate training programs with economic policy agencies. While a laudable goal, a one-sided emphasis on assisting the disadvantaged reduced the effectiveness of the entire effort, he concluded:

> Unless ... the other objective of manpower policy: namely, to increase the nation's economic strength, stability, and viability, develops a wider and more comprehensive clientele and operational field for manpower activities, those activities will simply add up to a more sophisticated form of public assistance. (Bakke, 1969)

After nearly 30 years of this narrow perspective, widespread concern over U.S. competitiveness in the global economy has begun to place workforce upgrading and the development of labor market policy on the national agenda. Upon instruction by the U.S. Congress, the Office of Technology Assessment (OTA) has launched a comprehensive study of training in the workplace, including public policy implications, that will report in mid-1990. USDOL's November 1989 report, **Work-Based Learning: Training America's Workers**, calls for the Department to adopt a "significant new role" that would place "additional emphasis on training and retraining issues affecting all workers." (U.S. Department of Labor, November 1989) A national-level commission chaired by Ira Magaziner, and funded by the State of New York, is conducting more than 2,000 interviews of company officials involved in training, here and abroad. Economic development programs operated by many state governments already consider training for employed workers to be a key component. Hundreds of employers have launched internal training and upgrading efforts, often in cooperation with union organizations.

Four Key Definitions

The literature on occupational mobility and career development is vast and variegated. First, some basic definitions are necessary.

Training is geared towards **occupations**, which may be defined as "relatively continuous patterns of activities that provide workers a livelihood and define their general social status." (Form, 1968) Occupations are grouped together into families or classifications (e.g. technical, clerical, unskilled, etc.) and are common to different industries. The Dictionary of Occupational Titles (DOT) describes the task elements of more than 24,000 distinct occupations.

Most relevant to the UCLP is the concept of a **career**, a "succession of related occupations that are hierarchically arranged and through which a worker rises in an ordered sequence." Associated with notable achievement in an occupation, a career is the opposite of random change from job to job.

> Careers imply a long, if not a lifetime, commitment to moving upward through a series of related occupations and statuses according to a schedule. They are, therefore, associated with situations in which occupational mobility is considered the norm. Typically, a career involves not only systematic education for the initial occupation but also systematic occupational experience in which each occupation is considered as technical and social preparation for the succeeding ones. (Form, 1968)

The pursuit of a career frequently includes the systematic **upgrading** of skills. The concept of upgrading is difficult to define precisely, for it varies according to the many dimensions of labor mobility. In his study of how higher-level jobs were filled in five industries in New York City, Charles Brecher defines upgrading as "a (positive) change in earnings associated with a shift to an occupation composed of tasks of increased skill or responsibility, usually not requiring a change in location or industry, which may or may not require a change in employer." (Brecher, 1972) In this usage, upgrading refers both to the informal or "natural" process by which an unskilled employee moves to a skilled job, and to formal training programs initiated by employers. Upgrading entails increased status for the worker, who moves to an occupation that is perceived to be "better" than the former position. Essentially, upgrading is an important part of the process by which an individual builds a career.

Finally, a **career ladder** may be defined as a specific succession or hierarchy of occupations, each considered "better" than the former in terms of wages, skills, responsibilities, working conditions or some combination of these and other factors. The career ladder concept implies the existence of a system: written, generally-understood guidelines or procedures for advancement that offer potential career mobility to employees on an equitable basis.

Upgrading Experience in Federal Job Training

Although pilot projects on upgrading were limited in scope and duration, previous federal job training programs provide some relevant lessons. The original MDTA, enacted in response to concern over the employment impact of technological change, fostered some useful experimentation. Beginning in the mid-1960s, USDOL funded a number of research and demonstration projects in two broad areas: (1) short-term "high intensity" or "single step" upgrading for service workers, nurses aides, metalworkers and paraprofessional social workers; and (2) career progression systems in food service, motor vehicle, health and agribusiness industries. Target groups were low-skill workers in entry-level positions. Results were generally positive, though evaluation of participant data raised questions about the long-term effect of the training on wage rates and promotions.

The most interesting findings from these early projects related to attitudes. Project operators found it relatively easy to market short-term, "one-step-up" training to employer and union representatives, but encountered stiff resistance when pursuing more long-term career progression systems. The prospect of new institutional arrangements threatened the status quo, leading to the "expression of overriding anxieties concerning loss of management 'control' and the possibility of stimulating expressions of worker discontent." The conclusion: the willingness of both top-level management and unions to "commit themselves with reasonable firmness to a course of change" is an important prerequisite for construction of an effective upgrading system. (Casey, 1975)

As the focus of the MDTA rapidly shifted to disadvantaged clients, study of upgrading dwindled. By 1968, according to USDOL statistics cited by Bakke, 86 percent of the persons involved in manpower programs were classified as being poor. While observers recognized that

upgrading would "pay economic dividends" in the long run, the policy priorities of the War on Poverty turned towards healing the "division between the prosperous many and the disadvantaged few." (Mangum, 1967)

The Comprehensive Employment and Training Act (CETA) of 1973 also authorized upgrading and retraining activities, but only for eligible disadvantaged, unemployed or underemployed persons. To analyze the extent of this activity, the Cambridge Office of Manpower Affairs in 1980 attempted to interview all 473 CETA prime sponsors, successfully contacting 361 to gather data. Fifty-eight prime sponsors reported that they had funded upgrading activities, the majority using OJT as the primary method of skill acquisition. All but two of these upgrading programs included "backfill commitments" in which employers agreed to hire disadvantaged CETA clients on a one-for-one basis for each worker upgraded. The largest CETA upgrading program, involving 357 workers at small- and medium-sized service companies, was operated in 1980-81 by the Louisiana Department of Labor.

Authors of the Cambridge study conducted 12 site visits of upgrading and retraining programs, several yielding interesting results. In western New York, for example, Erie County CETA worked with a labor-management institute to develop an upgrading program for employed machinists in the operation of Computerized Numerical Control (CNC) equipment. Participants attended classes two nights per week for 12 weeks, and were assured of wage increases by their employers (mostly small companies) when they successfully completed the program.

A 26-week program, closer to the apprenticeship model, was conducted in 1979-80 for Line Mechanics in Multnomah and Washington Counties, Oregon. The CETA prime sponsor there made arrangements with auto dealerships to provide upgrading to autoyard service workers. Participants worked on-the-job four days per week and spent the fifth day in classroom training, with CETA picking up total wage and fringe costs for the fifth day. Employers agreed to "design at-work assignments to contribute to skill advancement based upon the classroom/shop instruction," and provide salary increases at the conclusion of training. (Cambridge Office of Manpower Affairs, 1980)

The traditional restrictions on upgrading have carried through the Job Training Partnership Act (JTPA). Although Title III of the JTPA provided services to the victims of plant closings and economic dislocation, eligibility was restricted to the long-term unemployed.

Sources of Upgrading Innovation

The most significant recent initiatives in the area of upgrading have come from non-federal sources: private and public sector employers, often working cooperatively with union organizations; and state government officials who recognize the economic development potential of a highly skilled workforce. Although precise figures on total expenditures for workplace-based training programs are difficult to come by, commentators agree that such programs have increased greatly during the 1980s. Explosive growth is suggested by the following statistics:

- The American Society for Training and Development (ASTD) estimates that employers spend some $30 billion per year on formal training, either provided in-house or purchased from outside suppliers. In eight years the ASTD's membership of company-based trainers tripled to more than 50,000 in 1986.
- A 1989 survey by **Training** magazine found that organizations with 100 or more employees were spending $44.4 billion on direct training (i.e. not including time spent on informal on-the-job training), representing a 12 percent increase over 1988.

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••• In a supplement to the Current Population Survey of 1983, more than 18 million persons reported taking training to improve their job skills after being hired. About 5.7 million of this group were involved in formal company training programs.

••• More than 3,000 education and training courses offered by industry have been approved for college credit by the American Council on Education (ACE).

••• A 1985 survey by the Association of Community and Junior Colleges found that 75 percent of those institutions polled were engaged in training for private sector employers.

••• The Carnegie Foundation reported in 1985 that 80 to 90 percent of all corporations offered tuition reimbursement plans, most geared towards on-the-job learning.

••• Cooperative education programs, where students alternate between the classroom and workplace-based training, involved some 200,000 students in 1988 — more than five times the number served in 1970. Some 50,000 employers nationwide now provide coop opportunities. General Motors, for example, employs 3,000 interns and cooperative students annually, most working as engineers.

••• In a single database, corporate officials have access to more than 91,000 training seminars. Another databank lists 32,000 training films and video productions.

The business press is filled with case studies of successful company-sponsored training programs, along with exhortations for firms to strengthen their commitment to human resource planning. **Business Week** has been particularly outspoken, devoting a special issue to "Human Capital: the Decline of America's Workforce" (September 19, 1988) and frequently covering innovative company attempts to retool the skills of service and manufacturing workers. While the programs of individual companies vary widely, many are part of quality control efforts and work reorganization that entails employee involvement and decentralized production teams.

An interesting twist on company-sponsored training is what **Industry Week** calls a "strategic approach" — promoting wide participation by "integrating training with a company's business goals and involving everyone from the chairman and chief executive officer to the engineers and production workers...." (McClenahen, 1988) This model requires strong management commitment from the very top, the author emphasizes, along with an orientation towards continuous training, the empowerment of workers, and concerted attention to the training needs of women, minorities and older employees.

A number of observers, however, question the depth of corporate America's commitment to training for all workers. "Despite the widespread belief that private sector training is so extensive that it rivals the formal education system, available evidence suggests that employers underprovide training to blue collar workers," comments Paul Osterman of the Sloan School of Management:

> According to a recent Conference Board study, only 18 percent of manufacturing firms provided non-exempt workers with training programs — compared to 33 percent who provided such programs for managerial employees and the 28 percent who offered programs to sales and marketing workers. Another survey, by the Bureau of National Affairs, provided similar but more startling results. Fully 60 percent of firms surveyed provided courses to managers, 50 percent to professional and technical workers, yet only 18 percent to nonexempt employees. Additional evidence on this point comes from a content analysis of training courses offered to firms by outside vendors. Only 14 percent of the more than

1500 outside courses surveyed claimed to serve other than clerical or managerial employees. (Marshall and Osterman, 1989)

Major barriers remain to be overcome. "We need a long-range view, but the pressures are against it," Peter Goldberg of the Institute for Educational Leadership told the **Miami Herald**. "The answer has got to be in the public sector, but corporate America, because of its insistence on tax cuts and domestic budget cuts, is weakening the country's ability to meet the need." (Boyd, 1989)

The Career Development Connection

The acceptance and diffusion of worker-oriented human resource policies throughout U.S. industry represents a monumental challenge. Its progress will be measured not in years but in decades and generations. Part of that challenge will be a wholesale reorientation of traditional approaches to career development. For the last century, writing and practice in the career development field has focused on professionals, technicians, white collar employees and, at the zenith of the corporate hierarchy, managers. The nation's prevailing corporate outlook on recruitment, promotion and training are built on the assumption that the job satisfaction and performance of management are the pivotal factors in business success. The celebration of the achievements of the lone entrepreneur, so prevalent in the 1980s, reinforced this perspective.

At the other end of the spectrum, following the tenets of Taylorism, production workers and their service-sector counterparts were valued mainly for their ability to take orders on the job and defer the creative thinking to others. Job satisfaction was not a consideration, it was presumed, for ordinary workers desired well-paying "jobs" not meaningful "careers." Public schools and training mechanisms all reflected this bias, resulting, in the words of the ASTD's Anthony Carnevale, in a "very elitist learning system, both in school and at work." (Goldberg, 1989)

Only in the last two decades has conventional wisdom begun to change. At the level of the individual worker, change has been driven by the maturation of the baby boom generation, raised in relative affluence and bringing different attitudes towards work into the labor force. The strike among youthful auto workers in the early 1970s in Lordstown, Ohio, thrust the "blue collar blues" and musings about worker alienation into public dialogue. As Cornell University professors Thomas Kochan and Harry Katz have pointed out, employers responded to this phenomenon by introducing management-oriented quality of work life (QWL) programs based on behavioral science theories that "ignored the conflict side of the employment relationship and ... left no significant role for labor unions as representatives of workers." (Kochan, 1984) Though seriously flawed, these programs set the stage for more significant forms of union and worker participation.

At the institutional level of private sector employers and government agencies, change has come from painful recognition of the new realities of global competition. MIT's **Made in America** report, among other studies, persuasively argues that our nation's long neglect of human resources, including deficiencies in our educational system, hamper the flexibility, productivity and innovativeness of U.S. firms when compared to Japanese, German and Swedish companies. The MIT study recommends that government make a concerted effort to foster greater human resource investment at all levels of the economy.

Is career counseling relevant to production workers? Based on the experience of thousands of dislocated worker programs, the answer is a resounding "yes." Since the passage of the Job Training Partnership Act (JTPA) in 1982, unions, community organizations and state government officials have developed dislocated worker programs that apply career development techniques to the needs of workers laid off from numerous manufacturing facilities. In cooperation with HRDI,

for example, the United Steelworkers of America (USWA) designed a comprehensive model for assisting their displaced members. Services include one-stop centers, continuous outreach, one-on-one counseling, job search workshops, job placement referrals, and other activities — all provided by staff recruited from the ranks of dislocated steelworkers — that cultivate worker "ownership" in programs and "assure that personalized, high quality services are available to members..." (United Steelworkers of America, 1986) Materials used by one of these programs, Steelworker's Reemployment Challenge in Campbell, Ohio, includes materials on skill assessment, occupational aptitude testing, finding job leads, labor market analysis, and resume preparation. Because of their first-hand knowledge of the content of steel mill jobs, and their commitment to helping their long-time coworkers, steelworkers were very effective as program staff.

A great deal of research and field work needs to be done to reorient the career development field to the continuous learning needs of **all** workers. Some lessons may be gleaned from existing literature. A 1987 BLS survey of occupational mobility behavior found that 10 million persons had moved to different occupations in a one-year period. As anticipated, younger workers (between the ages of 25 and 45) were most likely to make a voluntary job change, usually staying within the same broad occupational group. Very few job leavers, the BLS discovered, are willing to make a "sharp break in their career paths by changing both employer and occupation." (Markey and Parks, 1989) This suggests that systematic career ladders and skill upgrading opportunities would be viewed favorably and used widely by workers.

Indeed, a 1974 study of male production workers in eleven manufacturing plants found that more than 80 percent of employees showed "very substantial interest" in career mobility inside their facilities. (White, 1974) Many in this group were using sophisticated strategies to actively pursue promotional opportunities.

Individual workers cannot pursue career advancement in a vacuum. They must have equal access to information about specific job openings and skill requirements, as well as knowledge of the organization's strategies for growth. Through a process of "career mapping," as utilized by the Summer Institute for Women in Higher Education Administration, trainees come to see their personal career goals in a wider institutional context. In order to develop an action plan for their careers, women at the Summer Institute not only articulate their personal values and life experiences, but also learn how to analyze the "institution as a whole, its mission, its values, its context in higher education nationally and locally, its informal agendas, its resources, and its problems." (Tinsley, 1984) Although this case study concerns women professionals, its wider implications are clear: effective career development systems require employers to divulge information on business plans, investment priorities and other factors that will influence the company's future.

The designers of human resource policies must be especially cognizant of how the "life cycle" of advanced technology affects the inclination of employers to develop career paths for their workers. When cutting-edge technology is first introduced into a firm, explains economist P.M. Flynn, proficient workers are not widely available and management must rely upon internal, on-the-job training or the services of equipment manufacturers. This early stage, characterized by small batch production and experimentation, promotes the selection of current employees for training opportunities. As the technology matures, high-level skills are transferred to production equipment and jobs become more specialized, a process of "deskilling" that increases the number of positions with narrowly-defined tasks. The hierarchy of occupations that emerge during this second phase provides fertile ground for the growth of career paths and ongoing learning systems. But timing is crucial. As the given technology becomes widely diffused throughout the society, training delivery moves to public educational institutions and more workers become available on the open market — often at lower wage rates than senior employees. This third stage jeopardizes the continued existence of internal job ladders, says Flynn, because "current workers are more

likely to be bypassed as individuals trained outside the firm are hired to fill the better jobs..." (Flynn, 1989) The evolution of technology can thus exercise a life-and-death impact on upgrading and career development.

A Wealth of Training Experience

Many of the most successful workplace-based training programs involve unions and function as cooperative labor-management efforts. In a survey of 102 joint union-company programs, researchers Michele Hoyman and Louis Ferman discovered that 40 percent included joint training (a figure that understates the scope of such activities). Nearly one million bargaining-unit members are covered by these programs, whose multiple purposes range from career planning and increasing literacy to "keeping jobs in the local area by upgrading the skills of the workforce." (Hoyman, 1989) The application of "jointism" to training in the industrial sector, comments Everett M. Kassalow of Carnegie Mellon University, represents a "significant innovation" in American industrial relations, a development that "may serve to point up what is a transcending issue, namely, the necessity to increase dramatically the resources available for training, from government and private sources." (Kassalow, 1987)

Union organizations at all levels are deeply involved in training throughout American industry: international unions, district councils and locals; private sector and public sector; industry-wide and based at individual plants; using training funds generated through cents-per-hour contributions or obtaining grants from state governments. On the whole these union-involved efforts place a high priority on skill upgrading, worker retraining in response to advanced technology, and worker empowerment to deal with a wide range of workplace issues.

The combined efforts of unions, companies and joint labor-management bodies constitute a tremendous wealth of experience from which the Upgrading and Career Ladder Program (UCLP) will draw. A range of innovative programs exist for workers in manufacturing, construction, extractive and shipping industries. HRDI has collected written material and spoken with the administrators of numerous union-involved training programs, a partial list of which follows.

- In 1982, the **United Auto Workers (UAW) and Ford Motor Co.** initiated an Education, Development and Training Program (EDTP) that provides training-related services to active and displaced hourly employees. As of June 1988, the EDTP had involved more than 240,000 active workers in life/education planning, basic skills enhancement, tuition reimbursement, education fairs, counseling, retirement planning and other activities.
- Building upon earlier skill development programs, the **UAW and General Motors (GM)** in 1984 established a National UAW-GM Human Resource Center to provide a battery of services: upgrading job skills, training needs analysis, Paid Educational Leave (PEL), career planning, adult basic education, tuition assistance, etc.
- In their 1985 contract negotiations, the **UAW and Chrysler Corporation** laid the groundwork for a National Training Center "designed to promote self-discovery, foster personal enhancement, and advance each worker's skills, knowledge and understanding of new technologies." (UAW-Chrysler Joint Activities Board, 1989) Hourly and salaried Chrysler workers, both active and displaced, have access to basic skills training, career counseling, computer awareness training, preparation for entry into the skilled trades, and related services.

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••• Since the 1950s, unions in the building and construction trades have enhanced the work of local JATCs by establishing national joint training trusts to develop uniform training materials, coordinate instructor seminars, teach health and safety techniques, and undertake activities that promote the benefits of quality union construction. Joint training trusts have been formed by the **IBEW; Iron Workers; Sheet Metal Workers; Operating Engineers; United Brotherhood of Carpenters; United Association of the Plumbing and Pipe Fitting Industry; Painters and Allied Trades; Plasterers and Cement Masons; Bricklayers; and the Laborers' Union.**

••• Following a decade of devastating plant closings, the **United Steelworkers of America (USWA) and Bethlehem Steel** agreed in May 1989 to institute a Career Development Program that conducts skill upgrading, training in innovative work systems, and career counseling — all based on a "shared vision that workers must play a significant role in the design and development of their jobs, their training and education, and their working environment." (USWA, June 1989)

••• A Training and Education Fund for unemployed coal miners, funded at about $4 million per years, was established in the 1988 contract between the **United Mine Workers of America (UMWA) and the Bituminous Coal Operators Association (BCOA).** Other provisions promote ongoing skill training geared to new technology.

••• One of the most comprehensive joint education and training programs, responsible for saving some 9,000 jobs in Warren, Ohio, was established in 1984 by **Local 717, International Union of Electrical Workers (IUE) and the Packard Electric Division of GM.** Closely linked to a pledge of lifetime job security, the program includes training in basic skills, group dynamics and problem-solving; analysis of new technology by union workers; and plant-level assessment of technical training needs.

••• In an industry swept by technological innovation and soaring demand, **Aerospace Machinists Industrial District Lodge 751 and The Boeing Company** negotiated a new Quality Through Training Program in 1989 that includes technical training and career development services for active and laid off workers. About $12 million annually is available for services.

••• The **International Ladies Garment Workers Union (ILGWU)**, with a long history of immigrant membership and a tradition of providing educational services, has developed special programs in which members learn English at the same time as they upgrade their skills and broaden their career horizons.

••• Drawing upon their experience operating dislocated worker programs, the **Ohio State Building and Construction Trades Training Foundation** receives at least $500,000 per year in state economic development funds to support skill upgrading for journey-level workers employed by a host of small contractors.

••• The pressures of international competition, along with a well-established apprenticeship program, combined to spur **American Flint Glass Workers Local No. 1000 and Corning Incorporated** to integrate ongoing training (e.g. job-related basic skills and functioning in self-directed work groups) with a Total Quality Program. Employees have access to more than 110 specialized courses described in an Education Directory.

••• Since 1967, the **Seafarers International Union (SIU)** has operated a central training facility, the Harry Lundberg School of Seamanship, that combines basic skills education, technical training, college credit, and instruction in trade union responsibility. As the largest training center for merchant seafarers and inland boatmen, the school offers an upgrading program to enable experienced workers to move into higher paying and more responsible positions.

••• In California, the **International Association of Machinists (IAM) and auto dealers associations** in Contra Costa and Santa Clara Counties provided union auto mechanics with upgrade training in fuel delivery systems, emission controls and repair of advanced electronic components. The state's Employment Training Panel (ETP) supplied funds of about $3.3 million.

As employment in service occupations and the public sector has exploded in recent decades, unions have struggled with the difficult task of organizing workers in a multitude of small worksites, often confronting overt hostility from anti-union employers and conservative politicians. Issues of rapid turnover, low employee morale, and the lack of advancement opportunities are gaining importance in collective bargaining negotiations. In this context, unions in service industries and the public sector are developing special training programs for their members. A sample of such programs follows.

••• In the wake of the divestiture of American Telephone & Telegraph, the **Communications Workers of America (CWA), Brotherhood of Electrical Workers (IBEW) and AT&T** founded the Alliance for Employee Growth and Development to promote "collective achievement through individual empowerment." Operating through a network of local committees, Alliance services for active employees include career options planning, technician training, tuition assistance and relocation counseling.

••• Working through a network of joint committees, the **CWA, IBEW and Pacific Northwest Bell** have launched a number of training initiatives since 1983, including career guidance, education fairs, curriculum development and on-site classroom training.

••• Since 1981, **Service Employees International Union (SEIU) Local 767 and Cape Cod Hospital** have operated a joint Career Ladder Program for all non-management employees in the hospital. Union workers have training opportunities through classroom instruction, special traineeships and trial periods in which they can return to their previous jobs. The Cape Cod program grew out of the international union's Lifelong Education and Development (LEAD) Program that was started with federal funds in the early 1980s.

••• In Las Vegas, Nevada, where tens of thousands of new jobs are being created by a booming tourist industry, **Culinary Union #226 and hotel owners** have integrated a new training program into their collective bargaining agreements. With some 26,000 members in 70 job classifications, the local is the nation's largest culinary union.

••• Since 1971, **District Council 37 of the State, County and Municipal Employees (AFSCME) and New York City government agencies** have operated an Education Fund that has designed upgrading programs for nurses aides to become Registered Nurses and medical technicians; developed "office skills enhancement programs" for clerical workers; and supported classroom training in specific occupational skills, among other activities.

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••• In Philadelphia, the Training & Upgrading Fund of **Hospital and Health Care Workers District 1199C** (now affiliated with AFSCME) works with 40 employers in the health care field to provide scholarships to members and their families, offer tuition reimbursement, conduct basic skills classes and train Registered Nurses.

••• Building on their success with tuition reimbursement and scholarship awards, the **Food and Beverage Workers Local Union 32 & Employers Benefits Fund** in Washington, D.C., is developing certification programs for food service workers in food preparation, safety, sanitation, cashiering and customer relations.

••• Because of collective bargaining terms won by **AFSCME Council 31**, state government employees in Illinois have access to tuition reimbursement, career planning, special trainee programs, and an $8 million "inequity fund" (to compensate workers as job classifications are upgraded to higher pay levels.)

••• Working with the public school system of Albuquerque, New Mexico, the **Secretarial/Clerical Association of the American Federation of Teachers (AFT)** has crafted a Career Development Training Plan that includes classes in computer literacy, communications skills, records management and administrative procedures. In 10 other states the AFT has negotiated contract language providing career-related services for members employed as teachers, custodians, food service workers, paraprofessionals, transportation workers and office personnel.

Though the above list gives a flavor of organized labor's extensive experience in career development and training, it still fails to reflect the full scope of these activities. The efforts of the Laborers' International Union, for example, actually encompasses 73 training funds with a great variety of specific programs. The UAW-GM Human Resource Center directs training at more than 150 company facilities nationwide, while the Alliance of CWA/IBEW/AT&T functions through a network of more than 200 local committees in 41 states. Continuous learning for unionized employees is moving rapidly towards the top of labor's bargaining and political agendas.

Union and Worker Participation

The 1990s may one day be remembered as the decade in which sound, worker-centered human resource policies finally gained a foothold in American industry. A number of signs point in this direction. As "the learning organization" becomes a business buzzword (Moss Kanter, 1989), the primacy of human resources has been accepted by mainstream management theorists. An increasing number of unions are pushing to integrate training programs and work innovations into their collective bargaining agreements. Recent studies demonstrate that higher productivity and quality are achieved when new technology, work redesign and worker/union participation are integrated into a "coherent, production system that depends above all on the quality of human resources that make it run." (Kochan, et al., 1989) Looming over all these developments is the specter of international competition, especially from firms in Japan, West Germany, Scandinavia and other nations with coherent policies that acknowledge the centrality of human capital.

Fundamentally, the evolution of this trend in different institutions is a political process. Management remains sharply divided between the "corporate liberals," their visibility heightened by prolific writing, and harshly anti-union companies that are content to compete by driving down wages and shifting production overseas. Debate continues in labor circles, especially in unions (e.g. UAW) that experimented early with joint training programs and face internal

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opposition to their policies. Workers struggle with the impact on their employment security and day-to-day working conditions. The federal government is moving fitfully — with no guarantee that resources will be available to carry out whatever policy is formulated.

The final outcome of these developments will be influenced by larger trends in industrial relations and the progress of union/worker participation in firms. The 1980s saw fascinating experiments in workplace innovation occur side-by-side with a massive anti-union offensive and waves of destructive plant closings. Durable progress in human resources will come only when management truly accepts the dignity of individual workers and their right to freely band together, and recognizes the fact that unions can make highly valuable contributions at the bargaining table and on the shop floor.

All too frequently, quality of work life and similar programs are manipulated by management to serve narrow ends. Yet unions at all levels are crafting a form of authentic worker participation that goes far beyond the sterile rhetoric of cooperation. "In a large number of labor-management experiments with real participation and with joint decision-making," AFL-CIO Secretary-Treasurer Thomas R. Donahue explained last December to the Industrial Relations Research Association (IRRA), "we have seen first-hand that efforts to build a strong worker participation program and efforts to build and maintain a strong and effective union can go hand in hand and achieve great success on both counts." He continued:

> We have no fear that real interaction with fair employers will diminish the strength of our unions. The business of seeking a stronger voice in workplace decision-making and a larger share of the profits is not so fragile a flower as all that. What is clear is that a strong union role in a sound worker participation program can strengthen the union itself, and the company, too, in ways that confrontation never can. (Donahue, 1989)

In this spirit, the UAW-Chrysler National Training Center (NTC) has added to its approach a unique worker participation component. In mid-1989, over the course of three conferences, 118 hourly and 72 salaried workers gathered to attain a more thorough understanding of NTC activities, share their personal and on-the-job experiences, and provide feedback to NTC staff. Attendees identified a number of important barriers to their co-workers involvement in training, formulating specific recommendations and strategies to help overcome the problems. To many, engagement in training meant higher self-esteem, recognition from friends and co-workers, and the skills and knowledge to reach a common goal: *"the joint development of the world's best workforce."* (Italics in original.)

Nor did Chrysler Corporation get off the hook. "Fully successful training and education programs can only be achieved," says the final report, composed by the workers themselves, "through coordination of corporate planning and worker participation." Looking ahead, conference-goers addressed both union and management:

> Worker participation in training and education can mean ... taking advantage of opportunities to become involved in the planning and decision making process. Constructive progress toward job satisfaction and security is inevitable when workers participate, expressing their ideas, and giving input. Progress is guaranteed when workers share responsibility for making sure the UAW and Chrysler design and implement the very best in training and educational opportunities. (UAW-Chrysler, 1989)

On the shop floor, the true character of participation comes down to who actually controls workers' knowledge and insights into the production process. Management-oriented QWL

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frequently consists of a talk process in which supervisors, sitting with employees in "quality circles," convince them to suggest cost savings and productivity improvement measures. Undergirding this process is what Andy Banks and Jack Metzgar have dubbed an "ideology of cooperationism." On the other hand, unions such as UAW Local 686 at Harrison Radiator and Transport Workers Union Local 291 in Dade County, Florida, have devised ways to utilize their skills and knowledge to improve business efficiency while retaining control over their insights, i.e. not divulging all of their cost-saving ideas to management. Through a "union-empowering worker participation program," the firm becomes more competitive, workers display their creativity and ingenuity (and help maintain their job security), and unions strengthen their role as the representatives of worker interests. (Banks and Metzgar, 1989)

Lessons gleaned from authentic worker participation are directly analogous to principles that guide worker-centered training. In New York City, for example, AFSCME District Council 37 has managed to reverse standard design practices that start with an evaluation of the work environment from a management perspective. Instead of forcing workers to adapt to workplace changes imposed from above, explains Education Fund Administrator Kathy Schrier, the union has developed upgrading programs that were "designed not only to meet the need of the work environment but were structured around the experience, skills and abilities of the present workforce. In other words, the central premise of these training programs is not the skills that workers lack but rather the skills the workers have." (Schrier) Curriculum content and class evaluation procedures as well are highly sensitive to the individual, family and community dimensions of members' lives.

Contemporary research in the field of cognitive science reinforces the necessity of worker participation in the design and conduct of learning programs that are truly relevant to the world of work. Lauren Resnick of the University of Pittsburgh has identified a number of discontinuities between traditional schooling and learning that occurs on the job, including the insight that schools stress individual reasoning while successful performance at work demands "shared cognition" and the resolution of problems in a group context. (Resnick, 1987) In-depth understanding of how work gets done is essential for effective training programs, and such understanding cannot be handed down from above by management or educational "experts." Some of the most powerful instructional methods, research in reading comprehension has discovered, incorporate a kind of "reciprocal teaching" in which the students themselves collaborate in the interpretation of texts and teachers provide guidance and feedback, eventually fading into the background. (Palincsur & Brown, 1984)

Cognitive scientists working in sociological and anthropological frameworks posit all knowledge, from basic language to the highest levels of technical proficiency, as being socially constructed. The technicians who repair photocopying machines offer an interesting case. As summarized by Senta A. Raizen (1989), studies have indicated that experienced technicians rely upon a "community of memory" and the exchange of "war stories" to diagnose copier malfunctions when the machines break down in unexpected ways. Their knowledge about unusual repair situations is socially constructed, i.e. developed through interaction with machine users and perpetuated through telling anecdotes. "Community memory preserves the working set of current knowledge, the information about new and as-yet-undocumented problems as well as critical information about the social labyrinths in which the machines are to be found," writes J.E. Orr. (1988) "Service is indeed about the maintenance and repair of machines, as least partially so, but ... a substantial portion of the work observed could be better described as maintenance and repair of the social context in which the machine exists." In effect, copier technicians participate in a continuous process of training, retraining and upgrading each other's skills and knowledge — typically during coffee breaks and informal after-work bull sessions.

In a given work situation, the passage of a novice to the level of full practitioner is essentially

a process of enculturation. Apprentice workers are gradually inducted into a work culture where the use of tools, be they physical or conceptual, has been established by that community. "Conceptual tools ... reflect the cumulative wisdom of the culture in which they are used and the insights and experiences of the individuals," explain Brown, et al. (1989) "Their meaning is not invariant but a product of negotiation with the community.... To learn to use tools as practitioners use them, a student, like an apprentice, must enter that community and its culture."

These and other insights of cognitive science demonstrate that theoretical knowledge can neither be separated from work situations, nor distilled by management "authorities" into universally-applicable rules. Training programs must integrate abstract concepts, social skills and real world simulations to produce a "situated learning" environment. Authentic knowledge of the job resides in the community of women and men who engage in those jobs, the workers themselves, and their understanding must be explicitly recognized and drawn upon in the design of continuous learning systems.

The interrelationship between effective training programs and union/worker participation will be a major subject of research and practice in the years ahead. Through the Upgrading and Career Ladder Program, HRDI will contribute to this process by developing a "participatory model" of structured workplace learning as applied to skill upgrading and career development. The hallmark of this model: a reliance upon the skills, knowledge and creativity of workers in the design and implementation of workplace training. Unless individual workers and their unions feel a sense of ownership of training programs, and are progressively empowered by them to become more involved in many aspects of company decision-making, workplace training will never attain its full potential. Though HRDI will conduct its demonstration projects in situations with collective bargaining agreements, this model will be applicable to both union and non-union environments.

Moreover, this "participatory model" will reflect labor's ongoing concern that workplace learning systems never reduce human labor to a purely economic function, but broaden workers horizons and aspirations for the benefit of the entire society. Samuel Gompers phrased it well in 1916 when he said that "education is an attitude towards life..." United Auto Workers President Walter Reuther shared these insights, demanding years later that "the proper goals of manpower policy go far beyond assurance of a job for everyone willing and able to work."

> The job must provide a useful and rewarding outlet for the worker's highest capacities. The work environment must promote dignity and self-respect. The work must offer opportunity for development and advancement. The job must pay a decent wage and insure the maintenance of income when the worker is unable, or denied the opportunity, to continue at work....
>
> Most of all, however, manpower policy should aim at making obsolete such words and phrases as 'manpower' and 'labor market,' for our central concern must increasingly be with the worker as a human being rather than as an instrument of production. (Reuther, 1967)

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AFL-CIO Human Resources Development Institute

Upgrading and Career Ladder Program (UCLP)

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